

COLORADO RIVER RECOVERY PROGRAM
FY 2003 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: 128b

I. Project Title: **Lower Green River Colorado Pikeminnow Population Estimate**

II. Principal Investigator(s):

Lead Agencies: Larval Fish Laboratory, CSU, Utah Division of Wildlife Resources, U.S.
Fish and Wildlife Service

Jointly Submitted by: Larval Fish Laboratory, CSU, Utah Division of Wildlife Resources, U.S.
Fish and Wildlife Service

Utah Division of Wildlife Resources

Paul Badame/Michael Hudson

Moab Field Station

1165 South HWY 191 - Suite

Moab, UT 84532

435-259-3782/fax 435-259-3785

paulbadame@utah.gov/michaelhudson@utah.gov

U.S. Fish and Wildlife Service

Tim Modde/Frank Pfeifer

Vernal Colorado River Fish Project

U.S. Fish and Wildlife Service

1380 S. 2350 W.

Vernal, UT 84078

435-789-0354; fax 435-789-4805

tim_modde@fws.gov, frank_pfeifer@fws.gov

Larval Fish Laboratory, Colorado State University

Kevin Bestgen

Department of Fishery and Wildlife

Colorado State University

Ft. Collins, CO 80523

970-491-1848/fax 970-491-5091

kbestgen@picea.cnr.colostate.edu

III. Project Summary:

Sampling conducted during this project was designed to obtain capture-recapture data needed to estimate abundance of Colorado pikeminnow *Ptychocheilus lucius* in the lower Green River downstream of the White River. Abundance estimates of endangered Colorado pikeminnow are needed to better monitor population status and provide benchmarks against which progress toward recovery can be measured. Sampling was conducted spring 2001, 2002, and 2003. The U. S. Fish and Wildlife Service was responsible for the reach of the Green River from the White River downstream to Tusher Diversion and the Utah Division of Wildlife

Resources was responsible for the Green River reach from Tusher Diversion downstream to the Colorado River. The Larval Fish Laboratory provided coordination, data checking, and data analysis assistance. Our primary goal was to capture, mark, and recapture as many Colorado pikeminnow as possible on at least three different sampling occasions in each river reach. Sampling occurred prior to or during spring runoff and ended before pikeminnow spawning migration. Electrofishing was the only sampling gear used. Captured pikeminnow were scanned for the presence of a PIT tag, and unmarked fish were marked. Data we report here are for fish 450 mm TL or greater, which differs from past reports where all PIT-tagged fish were reported. In 2001, a total of 407 Colorado pikeminnow captures were recorded. In 2002, a total of 177 Colorado pikeminnow captures were recorded. In 2003, a total of 176 Colorado pikeminnow captures were recorded. These data will be used to obtain abundance estimates for each river reach.

IV. Study Schedule: Initial Year 2001
 Final year 2004

V. Relationship to 2003 RIPRAP:
Green River Action Plan: Mainstem (pg. 27)

V. Monitor populations and habitat and conduct research to support recovery actions (Research, monitoring, and data management).

V.C. Conduct population estimate for Colorado pikeminnow

V.C.2. Desolation/Gray

V.C.3. Lower Green River

VI. Accomplishment of FY 2003 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Goal: Obtain a reasonable (confidence intervals of less than 20% of estimate) estimate of the adult population abundance and survival of Colorado pikeminnow occupying the lower Green River study area.

Task description and schedule:

Task 1. Three sample passes through section 1 (confluence with White River to Tusher Wash Diversion) using 2 electrofishing rafts, and marking and recapturing Colorado pikeminnow ≥ 250 mm TL; complete task within 50 days after starting. Sampling occurred in spring.

Task 2. Three sample passes through section 2 (Tusher Wash Diversion to confluence with Colorado River) using 2 electrofishing boats, and marking and recapturing Colorado pikeminnow ≥ 250 mm TL; complete task within 50 days after starting. Sampling occurred in spring.

Task 3. After first year, analyze data, consult with statistician, and alter sampling design

if necessary.

Task 4. Data entry, data analysis, consult with statistician, write annual report.

Task 5. Sampling team coordination, data entry, and analysis.

All tasks were met in year 2003. Initial discussions by agency teams refined the methodology for sampling. Standard data sheets and the Standard Operating Procedure Manual used for the middle Green River abundance estimation project (22i) were sent to all field personnel (Tasks 1, 2, 4, and 5). The Manual provided an overview of the work, the sampling approach, endangered fish handling and tagging procedures and standardized data forms. Periodic updates among crews during the sampling period allowed a refined approach to sampling (Task 5). Crews also had to equip and rig equipment specific for the sampling approach (Task 2). Four sampling passes were completed for the Desolation-Grey Canyon reach (one more than planned) and three passes were completed in the lower Green River sampling reach as planned (Task 3).

In 2001, electrofishing effort included 161 hrs in the Deso-Grey reach for the three sampling passes 318 hrs for all four sampling passes in the lower Green River. In 2002, electrofishing effort included 230 hrs in the Deso-Grey reach for all sampling passes, and 247 hrs for three sampling passes in the lower Green River. In 2003, sampling occurred from late-March to early-June, 2003 (Table 1). Electrofishing effort included 223 hours for four sampling passes in the Deso-Grey reach and 253 hours for three sampling passes in the lower Green River.

In 2001, total Colorado pikeminnow captures recorded during all passes was 407, 226 from the Deso-Grey reach and 181 from the lower Green reach. Recaptures of Colorado pikeminnow from the Deso-Grey and lower Green River reaches totaled 22 and 33 events, respectively and include only fish handled on previous 2001 sampling passes. In 2002, total Colorado pikeminnow captures recorded during all passes was 177, 111 from the Deso-Grey reach and 66 from the lower Green reach. Recaptures of Colorado pikeminnow from the Deso-Grey and lower Green River reaches totaled six and five, respectively, and represent fish handled only during 2002 sampling passes. In 2003, total Colorado pikeminnow captures recorded during all passes was 176, 117 from the Deso-Grey reach and 59 from the lower Green reach. Recaptures of Colorado pikeminnow from the Deso-Grey reach and lower Green River reaches totaled six and four, respectively, and represent fish recaptured within the 2003 sampling season. All fish reported above for 2001-2003 were 450 mm TL. The single exception was 10 fish of unknown length that were included as adults from the 2003 Deso-Grey reach sampling when data sheets were lost (with recorded total lengths). In 2003, 65 and 150 Colorado pikeminnow less than 450 mm TL (181-449 mm) were caught and PIT-tagged in the Deso-Grey and lower Green River reaches, respectively. In 2003, 30 Colorado pikeminnow were captured and released, one in the Deso-Grey reach and 29 in the lower Green, because they were too small (total length 76-144mm) to tag.

All data reported here are preliminary and subject to change after all data forms and data files are further scrutinized for errors and clarified.

VII. Recommendations:

Analyze data and write final report.

VIII. Project Status:

Project completed.

IX. FY 2003 Budget Status

- A. Funds Provided: \$176,900
- B. Funds Expended: \$171,000
- C. Difference: \$5,900, some data verification and analysis remains to be accomplished.
- D. Percent of the FY 2003 work completed, and projected costs to complete: 95% complete, no additional funds needed to finish project.
- E. Recovery Program funds spent for publication charges: None

X. Status of Data Submission (Where applicable):

PIT Tag data files will be submitted by individual agencies (USFWS, UDWR) by January 2004.

XI. Signed: Kevin R. Bestgen 11-13-2003
Reporting Principal Investigator Date

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Table 1. Sampling dates and effort for lower Green River population of Colorado pikeminnow, 2003. Data are preliminary and subject to change. All fish reported here are 450 mm TL or greater.

	Dates	Days Sampled	River Miles Sampled	Total Effort (hours)			Number of Pikeminnow Captured ¹
				Trammel/ Electro- fishing	Fyke Nets	Electro- fishing	
Deso-Grey							
Trip 1	March 24- April 2	8	246 -128	0	0	57	33
Trip 2	April 14 - April 23	8	246 - 128	0	0	53	22
Trip 3	May 5 - May 14	7	246 - 128	0	0	48	21
Trip 4	June 2 - June 6	5	248 - 128	0	0	65	41*
Total		28		0	0	223	117
Lower Green							
Trip 1	April 13 - April 23	9	120 - 0	0	0	91	16
Trip 2	May 6 - May 16	9	120 - 0	0	0	84	14
Trip 3	May 25 - June 4	9	120 - 0	0	0	78	29
Total		27		0	0	253	59

¹ Total number of Colorado pikeminnow (over 450 mm TL) captured includes recaptures.

* Includes ten Colorado pikeminnow assumed to be adult size for which no length data was available (lost data sheets).